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Zinpro-40' Additions to Pig Starter Diets

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Previous research at this station (A.S. Series 74-27) had found "Zinpro-40," a zinc proteinate, to be ineffective in improving performance of growing-finishing pigs. It has been suggested that a response to the compound might be obtained with younger pigs in a stress condition after weaning.

The objective of this study was to determine the effect of "Zinpro-40" in diets of pigs mixed from two sources as well as housed in open-front houses during October and November.

Experimental Procedure

Ninety-six pigs averaging approximately 22 pounds were used in the study which compared an 18% protein basal diet (table 1) containing 25 ppm of added zinc with the same diet plus 2 pounds of "Zinpro-40" per ton. "Zinpro-40" contained 9% zinc and thus added an additional 90 ppm of zinc to this diet. The pigs were mixed from two sources (SDSU pigs and pigs from a commercial feeder pig producer) on the day they were allotted to the two treatments. The pigs from the two sources were grouped in six weight groups of 16 pigs each. They were then allotted to two pens receiving the two diets on the basis of sex, source and weight from within the groups of 16 pigs. The allotment resulted in two pens in each weight group with equal numbers of pigs from each source, from each sex and with the same average weight. The trial lasted 33 days.

TABLE 1. COMPOSITION OF EXPERIMENTAL DIET (%)

Ingredient	Control diet
Ground yellow corn	70.50
Soybean meal, 44%	26.50
Dicalcium phosphate	1.15
Limestone	1.10
Trace mineral salt[a]	.30
Vitamin-antibiotic premix[b]	.45

[a] Contains .8% zinc.

[b] Supplied per pound of diet: vitamin A, 2000 IU; vitamin D, 200 IU; vitamin E, 3 IU; vitamin K, 1.2 mg; riboflavin, 1.5 mg; pantothenic acid, 6 mg; niacin, 9.6 mg; choline, 30 mg; vitamin B_{12}, 6 mcg; selenium, .05 mg; penicillin, 25 mg; aureomycin, 50 mg and sulfamethazine, 50 milligrams.

Results

A summary of the performance of the pigs is shown in table 2. No differences in average daily gain or feed per gain were observed. The average gain of 1.00 pound per day and feed/gain ratio of 2.41 are normal for this weight of pigs. Temperatures during the test were 45° F for a mean high and 24° F for a mean low. Although the pigs were under considerable stress from mixing pigs from two sources and being housed in open-front housing, no improvements in performance were observed when "Zinpro-40" was added to the diet.

TABLE 2. EFFECT OF "ZINPRO-40" SUPPLEMENTATION OF PIG STARTER DIETS (33 DAYS)

Starting weight, lb[a]	Control	"Zinpro-40"[b]
	Average Daily Gain, Lb	
25.6	1.09	1.13
24.0	.99	1.01
22.4	1.04	.91
21.2	1.03	1.15
19.2	.99	.93
18.0	.82	.88
Avg 21.7	.99	1.00
	Feed Per Gain	
25.6	2.44	2.46
24.0	2.56	2.49
22.4	2.38	2.56
21.2	2.45	2.23
19.2	2.19	2.24
18.0	2.51	2.39
Avg 21.7	2.42	2.40

[a] Eight pigs per pen.
[b] Contained 2 pounds of "Zinpro-40" per ton (90 ppm zinc).

Summary

Ninety-six pigs averaging 22 pounds were used to compare a basal starter diet containing 25 ppm of supplemental zinc with the basal diet plus 2 pounds per ton of "Zinpro-40," which gave a diet containing 115 ppm of added zinc. The pigs were mixed from two sources and housed in open-front housing to create a stress situation. Over the 33-day trial, no differences in average daily gain or feed per gain were observed. No improvements were observed from adding "Zinpro-40" to the starter pigs' diet.